

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: NYOUNG@nova.wright.edu
Subject: [1893] 1.75 km sigs, low power loonies & marxist dialectics
Message-ID: <01HZ9Y1ISGKI8X3JNS@nova.wright.edu>

A couple months ago I picked up a piece of PVC pipe. It's about 5 inches long and about 8.75 inches in diameter. I drilled a couple holes at each end, wound a whole bunch of Teflon covered wire on it and then taped it up good before winding on a couple ten turns of secondary. I used an old chart in the 1.75 meter handbook that I got years ago and figured I could resonate it at 180 kHz with a 400 pf cap. It resonates there nicely, thanks.

The reason that I know that it resonates there is simple: I have one of those few TR7s that was set up (by me, on my own, with a bunch of diodes) to receive from DC to 30 MHz. So I hook up the secondary of this monstrous coil doodad to the VLF antenna input what I have on the back of the TR7. I put a 400 pf variable across the primary. I tune. I hear stuff. In fact....

I heard a signal on 183.9 kHz at about 0100 UTC calling XJ XJ XJ XJ XJ. So I quick got the wires hosed up to put the high side of the secondary on my wire antenna and listened again. The whole signal went like this CQ CQ CQ de XJ XJ XJ CQ CQ CQ de XJ XJ XJ. Then after another cycle of this beaquesque stuff, a K. And since my TR7 transmits from DC to 30 MHz, I quick sent out the reply XJ XJ XJ de JN JN JN K. And no response. But what the heck, I had .225 V of RMS RF going out the wire. What's that at 50 Ohms? A microwatt?

Now the question remains: Who the hell is XJ? Where is this person? What kind of madman would send CQ on the 1.75 km band in the middle of the winter? Did he really expect a call? Did he even hear me? Why am I asking all these questions? Why don't you answer? Huh?

And if you're asking me why I put all this stuff together tonight in a room heated only by a kay-row-scene heater, that answer is simple too: I had the coil form. It was just a matter of finding the statue that was hidden inside. Oops, wrong philosophical tangent. Ok, I had the coil form and I'd been planning on winding a big motha coil for weeks. Now to get my crystal order together for CW Xtals (including, of course, a order for a 1.75 km band xtal), build up an oscillator what'll run it, plus a buffer amp and a final amp that will only run 1 watt input to a 50 ft max antenna.

Anyone else out there crazy enough to play? C'mon, make my day. I'm gonna be 50 in about a week and I need the entertainment. And besides, I don't wanna write a paper on Ogden Nash. I'd rather spend my time on the semiotics of vegetables in the works of

Jakob Sande. He's Norwegian, you know. Maybe even a socialist, too.
Hard to tell, since he's been dead for about 2 years shy of 30 now.
Must have been the vegetables, eh?

73 & Happy Noise Year to you too, Bucky!

Nils

WB8IJJN (plus a shot or two of whiskey... and I can still annoy
people.)

From qrp-l@lehigh.edu Tue Dec 26 21:14:31 1995
From: victorj@fast.net
Subject: [1894] AIR Mosaic Feedback Mail
Message-ID: <199512270156.AA23964@relay.interserv.com>

Mail sent from AIR Mosaic (16-bit) version 3.07.04.02

From qrp-l@lehigh.edu Tue Dec 26 21:14:31 1995
From: victorj@fast.net
Subject: [1895] AIR Mosaic Feedback Mail
Message-ID: <199512270200.AA24054@relay.interserv.com>

Mail sent from AIR Mosaic (16-bit) version 3.07.04.02

I would like to
subscribe QRP-L
Victor J Celani wm3b

From qrp-l@lehigh.edu Tue Dec 26 21:14:31 1995
From: PDouglas12@aol.com
Subject: [1883] CMOS III Keyer
Message-ID: <951226112928_23980923@mail04.mail.aol.com>

Gang,

This is an unabashed plug for the Idiom Press CMOS III keyer kit. (Address
in any recent QST--I don't have it handy.) For \$58 bucks plus shipping, this
is an amazing buy. It will do as much as or more than any keyer I ever saw.

Eighteen memories of 85 characters, simple editing, comprehensive menu of
keyer emulations (Curtis a/b etc.) and lots of contest options. Frankly,

having used my prior CMOS II in Field Day, I can't imagine not using a CMOS keyer in a CW contest. And wait, the III has non volatile memories. So, unlike the CMOS II, it doesn't need batteries when it isn't in use. Just connect power, and it is ready with all settings and memories intact from last session, no matter how long ago. My older CMOS II (with AA alkalines inside) had the annoying habit of dying about once every four or five months, needing reloading of all memories and parameters. But the III is forever! So don't save ten bucks and buy the II when you can have the III.

The kit comes with no instructions, just a schematic buried in the middle of the users manual. Just stuff the circuit board, add a 100k linear pot from Radio Shack (\$1.29), six momentary switches, and a case of your choice.

There's no need for a construction sheet, as the board is silk screened, and the parts are obvious. Go back to the article in the (?) August 95 QST for more details (but still no step-by-steps). But an experienced builder won't need anything but the board and the schematic

While you are in Radio Shack, pick up a 78L005 regulator (about a buck) and use it to feed the keyer. Then you can use 12v or even a 9v transistor battery to power the keyer. (6v should work, but I haven't tried it.) The regulator is very simple insurance against reverse power connections, too.

You are likely to only kill the the regulator, so it's cheap insurance. I use the shack 12v distribution supply, so I get greeted with an "OK" when I turn on the main switch. Mine worked off the bat (unusual for me, Mr. hurry up.) I did use a magnifying glass to solder the board as the lands are very very tight. Solder bridges are likely unless you check every joint. I had two that bridged, but I saw them under the glass as I was building. A photostat of the board before you start would be a help to find bridges after the board is stuffed. I got away without one this time.

Usual disclaimers. I am not even acquainted with the proprietors of Idiom.

72,

Preston WJ2V

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995

From: jeffa@ix.netcom.com (Jeff Anderson)

Subject: [1871] Dayton dates?

Message-ID: <199512260543.VAA06791@ix5.ix.netcom.com>

When is Dayton happening this year?

Thanks!

- Jeff, WA6AHL

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995

From: weinfurtner@ouvaxa.cats.ohiou.edu (Greg Weinfurtner)

Subject: [1889] Deep Cycle Battery WWW links
Message-ID: <v01510109ad0596eb394e@[132.235.72.11]>

Deep Cycle Battery information WWW addresses:

<http://seclab.cs.ucdavis.edu/~wee/marine.seminar.html>
It is a marine electrical seminar...great stuff on batteries!

<http://www.hampstead.k12.nh.us/~djade/>
Jade

<http://nyquist.ee.ualberta.ca/~schmaus/dcbat.html>
Battery FAQ

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*****
*                                     Greg Weinfurtner AEE BSS *
*      NN      N  SSSSSSS  8888888  0000000  Electronic Design Splst *
*      N N     N  S        8      8  0      0  Ohio University   Athens *
*      N N     N  SSSSSSS  8888888  0      0  GO BOBCATS!          *
*      N  N N          S    8      8  0      0                               *
*      N      NN  SSSSSSS  8888888  0000000                               *
*                                                                 *
*                                                                 *
*      Amateur Radio                Can thou send forth lightings *
*                                     that they may go and say unto *
*      weinfurtner@ouvaxa.cats.ohiou.edu thee, 'Here we are'? Job 35:38 *
*****
```

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: KE3FL@delphi.com
Subject: [1886] FOLDED DIPOLE QUESTION
Message-ID: <01HZ9HFXYT0Y985HT9@delphi.com>

If we design a folded dipole for 80 meters, could we also place shorting bars at the correct locations for 40, 30, etc?? and use the same antenna for all the bands? In other words, would these other shorting bars interfere with the other bands? You can see my point. If they don't we can make a broader banded antenna for multiple bands with the same feed-point impedance. Has anyone tried this?

We do the same sort of thing for regular dipoles, but here we have to

make different dipoles and attach all of them to the same feedline & then fan them out. There might also be some interaction.

It seems to me that we would get less interaction since we're using the same wire, at least in that sense, but perhaps this idea would not work at all. Any takers?

73 de KE3FL/Phil
:-)

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: BRUCE3900@delphi.com
Subject: [1896] FOX-O-POLOGIES
Message-ID: <01HZ9ZSURLSMS985K2N@delphi.com>

W6TOY/3, your Wednesday evening entertainment this week regretfully announces he won't be in the hunt. Sad, but true, the perils of gainful employment dictate I must forego the pleasure of being your fox this Wednesday evening.

BUT, Wait...

If enough of you can help me schedule a make-up session, even for the weekend (go on, give me a reason to skip the Rose Parade!) I'll work out a way to get on the air for a couple of hours and fulfill my duty to all youse hounds.

73,
Bruce -- W6TOY/'3
QRP, Really! (c)

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: jsbraun@vivanet.com
Subject: [1888] FS: Heathkit HW-9 w/ manuals
Message-ID: <9512261335.aa08330@vivanet.vivanet.com>

I have for sale a Heathkit HW-9 QRP Transceiver w/ WARC Band kit installed. The Transceiver is in excellent condition, and includes all manuals. I am reducing the number of QRP Rigs in the shack...since I can only operate one at a time anyways. I am asking \$250 for it. If interested please E-mail me or call (716) 367-9826.

Thanks / 72's
de Scott
KB2GWF

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: AC6JA@aol.com
Subject: [1884] hamstick doublet antenna
Message-ID: <951226113431_79111028@emout04.mail.aol.com>

hi there. name here is mike and i'm located in foster city, california. i live in a townhome where there are strict antenna regulations, but i am dedicated to amateur radio and will not let that stop me from operating hf. i would just like to share an antenna i just built that should work well for anyone living in an apartment or townhome with antenna restrictions and limited space.

the worldradio magazine of november, 1995 had an article on a hustler doublet which i paralleled and would like to share with the newsgroup. it consists of two 40m hamsticks mounted in the horizontal plane by using two radio shack mirror mounts back to back and then mounted on a vertical pole. this balanced antenna is then fed through a van gordon 1:1 balun using regular rg-8x coax. i mount this antenna on my balcony using a telescoping painter's pole which extends from 6ft to 16ft. during the day i use a 20m attic-mounted dipole, but at night, under the cloak of darkness, i put the compact rotatable dipole up. seems to work just fine and was able to match to 1 to 1 swr.

this antenna should work well for portable qrp operation as it is lightweight and ground independant.

total cost of the antenna including the two 40m hamsticks, two radio shack mirror mounts, van gordon 1:1 balun and painters pole is under \$100.00.

hope this helps out any "antenna impaired" qrp operators here on the newsgroup.

72's.

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: bfollett@ditell.com
Subject: [1892] Hotel Antennas/Compact Loop
Message-ID: <199512270006.RAA26986@solar.ditell.com>

Ok Gang, I got inspired (off my dead ass) by my last post, same subject, and built a McLelland Distributed Capacity Twisted Loop for 40M.

Its an inverted delta, < 6feet per side, fed with RG174. Using the RF Analyst, I pruned the open stub for 7040Khz, and had an impedance (on the coax, not the antenna) of 55 ohms, SWR 1.1 It has a closed stub also, used for impedance

Hung the antenna over a double closet door, heard K8ORD/7 near Phoenix calling CQ, and gave him a shout. He gave me a 559, I gave him 579, he was running 200 watts, I had my mighty 5 watts out. So it works...

Further comparisons with my full wavelength 40M horizontal loop on receive shows about a loss of one third to one half an S unit except at nulls. (apparently, the designer uses one on a tripod, and rotates to null 40M broadcast crud). The other good news is with its very narrow bandwidth, it makes a fine preselector to a travel-size qrp radio (read, non-bullet proof frontend).

72 es Happy New Year, Bob WA7FCU

From qrp-l@lehigh.edu Tue Dec 26 21:14:31 1995
From: roy.gregson@usfamily.wa.com (Roy Gregson)
Subject: [1873] NW8020
Message-ID: <9512252300155470@usfamily.wa.com>

The NW8020 was designed to bring fun and creativity back into Ham Radio. You build it from a kit with instructions for testing as you go using a minimum of test equipment.

The NW8020 is a superhet rig with clean true silky smooth QSK keying. No noisy relay, no switches to throw. You hear interference or breakers between characters. The muting makes your transmitted signal sound like the station you are talking to.

- * Single band transceivers for 80, 40, 30, and 20
- * Sensitive single signal superhet receiver
- * Crystal ladder filter for excellent selectivity
- * Variable Bandwidth Crystal Filter Option
- * Stable Vfo
- * QSK smoother than many commercial rigs
- * RIT +/- 1khz
- * 8:1 VFO vernier
- * 5 watts out adjustable down to MW
- * Plenty of speaker audio
- * Pleasant sidetone
- * Optional 2 pole audio filter
- * Step-by-step assembly and test as you go instructions
- * Silkscreened and Solder masked PCB
- * 12-13.6 VDC operation
- * Provision for adding the KC-1 Keyer & Frequency Counter
- * Solid fun

Instructions include testing of each subcircuit as you assemble, so you really know it is safe to move on to the next module, and it is going to work when finished. If a problem occurs, help is just a phone call away.

NW8020 (specify band).....\$75.00
F1 optional audio filter\$20.00
S + H \$5.00

Make checks or money orders payable to EMTECH

EMTECH
Roy Gregson W6EMT
13848 SE 10th
Bellevue, Wa. 98005
206-747-6810
ROY.GREGSON@USFAMILY.WA.COM

hThe NW8020 is a superhet rig with clean true silky smooth QSK keying.

No noisy relay, no switches to throw. You hear interference or breakers between characters. The muting makes your transmitted signal sound like the station you are talking to.

- * Single band transceivers for 80, 40, 30, and 20
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- * Crystal ladder filter for excellent selectivity
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13848 SE 10th
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206-747-6810

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From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: WJ4PRandy@aol.com

Subject: [1887] OHR400 Hiss

Message-ID: <951226130826_79144205@mail06.mail.aol.com>

Jess, N0TFI reported a hiss on his OHR400 when the audio filter is off. I noticed the same thing and I put a .2uF cap across the diodes (D201, 202) in the feedback loop of the audio amp IC (U206). This removed the bulk of the high frequency hiss that tended to grate on my nerves after some time.

Its easy to tack solder the cap across one of the diodes from on top of the board so you don't have to remove the circuit board to do this.

73,
Randy WJ4P

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995

From: WJ4PRandy@aol.com

Subject: [1878] OHR400 I.F. Mod

Message-ID: <951226094115_99294785@emout06.mail.aol.com>

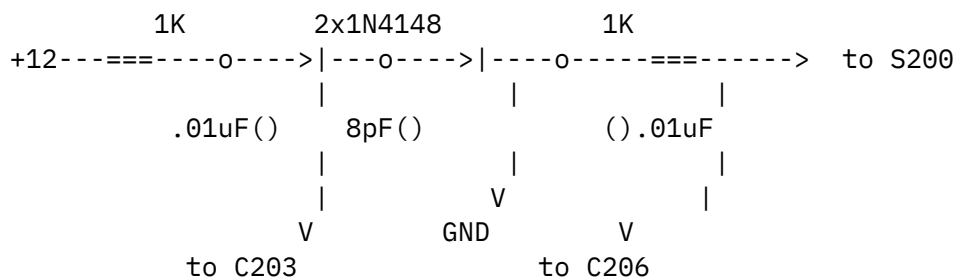
Hi gang,

I made a modification to my ohr400 that you might be interested in. I noticed that the ohr400's rcvr passband is pretty tight. That is good generally unless you're hunting for someone...like the fox..for example. The combination of the narrow bandpass and the tuning ratio had me skipping over stations between elements! Also, I like a wider bandpass at times to hear whats going on around me

The mod, is simply to bypass two of the I.F. crystals in the 9 mHz IF strip on demand . This is done with a diode switch that is activated by the AGC front panel switch. I picked the AGC switch since I was just testing this idea and secondly because I noticed the AGC was not very effective. (Perhaps there is a problem with my AGC circuit?) The whole thing wired up on a piece of perf board about 3/4" square and I "flew" it off the bottom of the RX board after tacking the wire leads to the appropriate places. I removed the wire at "S200" and ran it directly to the "daughter board" I built. (Note: The AGC is active 100% of the time now.) I used a thin piece of cardboard to insulate the daughter board from the chassis.

I connected the circuit to circumvent the center two xtals, Y201 and Y202. The circuit connects via a capacitor to C203 and then another capacitor to C206.

Circuit:



Parts list: 2) 1N4148
2) .01uF caps
1) 8pF cap
2) 1K ohm resistors

This mod results in a trace amount of "blow-by" manifested by hearing the other "side" of the cw signals. It is very faint and only apparent on really strong signals.

Thanks to Lee Richey, WA3FIY for his help. Seems I can't handle decimal points any more!

73,
Randy, WJ4P

From qrp-l@lehigh.edu Tue Dec 26 21:14:31 1995
From: Harvey Winters <ve1hdw@fox.nstn.ca>
Subject: [1880] Phone #
Message-ID: <199512261503.LAA13478@Fox.nstn.ca>

Sorry guys for bandwidth.

Someone gave me a phone # for canadian source of toriod cores. Sorry I have lost that. Maybe you could forward me that number again Please.

72/73 de Harvey
Harvey D Winters VE1HDW
ve1hdw@fox.nstn.ns.ca
G-QRP #8973 NE397 CQC177
QRP ARCI #8963 QRP-L #115

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: af852@rgfn.epcc.Edu (William R Colbert)
Subject: [1879] QRP + cw
Message-ID: <9512261451.AA12456@rgfn.epcc.Edu>

A couple of things have come up using the Plus. One was mentioned a few weeks back by one of the Socorro, NM fellows - that when using an external keyer thru the manual key jack, the speed cannot exceed approximately 30 WPM or the Plus starts to cut out and gives only an occasional dit or dah. One local checked his and his started to malfunction at 28 wpm. My plus seems to cut out at approximately 25 to 30 wpm (using the Heath HD1410 keyer) plus sometimes, it will not key at all. In addition, it will on occasion it will kick the microprocessor to some odd frequency such as 49.875 Mhz and then the VFO will tune between this freq and 7.999 Mhz. I guess my question for the Plus users is this - has anyone else noticed these problems, is there a simple solution? Also, has anyone with the older keyer chip received the updated one that gives the 1 WPM increments.
Sorry to use all this space, but I thought I would ask some questions I don't remember seeing on here. Thanks, Ray

--

Ray, W5XE, El Paso, Tx/V31XE, Banana Bank, Belize
QRP-ARCI,MI-QRP, NW-QRP, G-QRP, NORCAL QRP, QRP-L
af852@rgfn.epcc.edu

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: roy.gregson@usfamily.wa.com (Roy Gregson)
Subject: [1870] QRP ANTENNAS
Message-ID: <9512252142365466@usfamily.wa.com>

The discussion on antennas has been interesting, and the inverted Vee has been a good antenna for me in the past. It has been many yeaars, but I seem to remember that an inverted Vee ideally should be at 45 degrees per leg from vertical. The reason was that on each half, the lobes have an "X" shape, and with the 45 deg, lobes from each half reinforce each other, and some gain is to be had, and the main lobes are end fire when compared to a dipole. With the antenna modeling programs available now-a-days, what happens when the antenna is say 55 feet on a side, fed with 450 ohm line. does the lobes still reinforce each other on all bands ? Oh the above antennas from my past were fed with 50 ohm coax, an

80 and a 40 meter antenna off of one feed line, worked great ! But in those days, all we had was the info from the ARRL handbook. No baluns, no tuners etc, back in vintage late 40's Please keep up the discussions very interesting ! Roy W6EMT

From qrp-l@lehigh.edu Tue Dec 26 21:14:31 1995
From: George.Gingell@bbs.abs.net (George Gingell)
Subject: [1885] QRP BEACON
Message-ID: <1995Dec26.122001.15602@abs.net>

From qrp-l@lehigh.edu Tue Dec 26 21:14:31 1995
From: kreinbd@ccgate.dl.nec.com (David Kreinberg)
Subject: [1881] QRP-L VIA WWW
Message-ID: <9511268199.AA819996828@smtpgw.ccgate.dl.nec.com>

Gang:
Would someone please relay the www address to gain access to qrp-l. My qrp-l web address bookmark was lost recently, and now I can't remember the addr.

Thanks much!

72/73 de Dave KK5HA
QRP-L #25

From qrp-l@lehigh.edu Tue Dec 26 21:14:31 1995
From: km@PACT.ORG.PE (Kris Merschrod)
Subject: [1876] Randy's question on the HW-40
Message-ID: <m0tUZAz-00003JC@rcp.net.pe>

A few years ago I did some experiments for response article for CQ-CQ did not respond! So here it is. This should shed some light on alternatives.

Coils vs Helically Shortened Elements

KRIS MERSCHROD
KA20IG/HR3

Coil and helically loaded elements offer a simple and practical approach to reducing the size of antennas. Articles by Ed Stiles (WA7P) and Bruce Auld (NZ5G) (CQ about 1991) on the helical approach attest to the utility of that technique. However, both authors also attest

to the fact that winding the helical is the hardpart. I've been approaching shortened elements with coils for a few years and wondered what the pros and cons of the two approaches would look like.

Following the advise of Stiles and Auld I built a 7'6" helically wound dipole for 21.100 MHz. Then I built a coilloaded dipole using the formulas and program suggested by Sander. Both were made with #22 hook-up wire and 1/2" PVC to replicate Stiles' work. Both dipoles were mounted on 20' lengths of PVC for easy raising.

The initial test for frequency of resonance and trimming was with the MJF "HF SWR Analyzer," both techniques were so far off the target that without such a far ranging analyzer I'd never had guessed which side of the 15 meter band I was on! But that is par for the course in this aspect of the hobby. Once trimmed, the SWR curves were determined using the station SWR meter (Drake MN-2000). Both antennas were tested using the same piece of coax. Once at resonance, an RX Noise Bridge was used to measure impedance and, in the case of the helically wound dipole, capacitance.

COMPARISON OF SWR CURVES

The helically wound dipole clearly has a broader, flatter curve, but its low point is 2.2:1. The coil loaded dipole has a 1:1 SWR at the resonance and reaches 1.9 at the high end of the band. By trimming to resonance at a higher frequency it could cover the 15 meter band with an acceptable SWR. The impedance of the of the helically wound dipole was 100 Ohms, this is the opposite of what Stiles' and most radio manuals indicate for a helically wound dipole using about a full wave length of wire. Nevertheless 100 Ohms is about what one would expect with an SWR of 2.2.

CONSTRUCTION -- Coil loaded

I usually put the coil half way between the feed-point and the end of the element, by drilling a small hole through the PVC, winding the coil directly on the element, and then drilling a second hole at the end of the number of turns needed. Enough wire for the tail is left attached after the coil and is then taped to the element until tuning is completed. The amount of wire needed is considerably less, and winding is more precise. In this, 15 meter, case the coil was situated 21.5" from the feed point and the tail is 22" long, the coil occupying 1.5" with its 29 turns.

TUNING

When reading material on helically wound dipoles one is led to believe that antenna is just a full wave-length of wire reduced in overall size by winding on a form. In reality, the helically wound element is a loading coil and the spacing of the windings determines the overall wire length needed for resonance at a given frequency. The wider the spacing the less the inductance for a given number of turns and diameter, thus the need to wind so much wire. This is easily seen if, instead of trimming the helically wound dipole, the wires are slid either toward the center (if the resonance is too high -- saves adding wire!) or away from the center (if the resonance is too low). In the former case you are loading more and closer to the feed point and in the latter loading more and further from the feed point. The closer the load to the feed point the less load needed for a shortened element. If the load is at the end then a greater inductance is needed. This can easily be seen by sliding one's hand firmly over the element and "bunching" the turns toward one end or the other. If the helix is tightly wound or held in place by tape or varnish so that there isn't any play in the helix, then bunching is not possible. This is easier than trimming wire and rewinding the helix. This approach does not maximize the radiation efficiency of the helix, but, once close to resonance, it is doubtful that the difference in efficiency will be noted.

In the case of the coil loaded dipole, when the coil is firmly fixed on the element by drilling a small hole at the beginning and end of the winding, there are two approaches to trimming:

- 1) if the resonant frequency is too low, then trim off the tail just like on any other dipole, but trim very short pieces because by reducing the tail the coil is relatively closer to the end and has less shortening effect.

- 2) The alternative is to remove a turn and trim off the excess. This alternative is better because it reduces the importance of the coil in the system. The coil is where the efficiency is reduced. If you are then too high, then simply add a turn or fraction there of, and leave the tail short.

In the case that the resonant frequency is too high, then add a turn or so. The formulas usually have too much inductance, but it might be necessary to add a turn and add to the tail.

ON THE AIR

Rather than add a transformer on the helically wound dipole I

used a "matchbox" to keep the old rig happy. I was able to switch back and forth between the two antennas. There wasn't any difference on the air between the two.

SUMMARIZED COMPARISON HELIX COIL

Ease of Calculation	+	-
Band width	+	-
SWR	-	+
Matching	-	+
Winding	-	+
Trimming	-	+
Material (#22 hookup wire)	44.4'	20.5'

ONE FINAL POINT ON TRIMMING FOR REFLECTORS AND DIRECTORS

In the article by Auld he suggests that the length of the wire in the helix be reduced by 5% for a director, but the correct approach is to tune for a frequency 5% above the resonant frequency in the case of the director and 5% below for the reflector in a three element case. The length of loading materials is not usually linearly related. Also, in the case of two element arrays keep in mind that the reflector or director "pulls" the resonant frequency of the driven element lower or higher, respectively. In the 3 element case, when the reflector and director are equally spaced from the driven element, the effect of the "pull" is balanced. However, when only a reflector or director is used and closely spaced (.1 to .15 wave), then the resonant frequency is, approximately the average of the two elements. So one needs to be careful because +/- 5% of 21.100 MHz is 1.055 MHz; a shift in resonance of approximately 500 Kc may be experienced after adding a parasitic element. Therefore, in the two element case the driven element should be tuned 2.5% higher than the desired resonant frequency (if a reflector is to be used) and the reflector 2.5% lower than the desired resonant frequency. Most of the time the final tuning is done on the driven element because it is easier to reach and is only a single variable, but what is really accomplished is a de-tuning of the whole system for the sake of SWR, but this does not maximize the F/B ratio or the gain.

--- FIN ---

Sorry about the loss of the foot notes but in conversion from old wordstar to ascii they were lost. But Saunder's work is in the coil loaded dipole formulae of ARRL.

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: km@PACT.ORG.PE (Kris Merschrod)
Subject: [1877] Small Intersections.
Message-ID: <m0tUZAz-000030C@rcp.net.pe>

Chuck,

Thanks for the nice stat work, I was racking my RAM this weekend trying to figure that out. For the small group that we are we sure have a lot of action!

Happy New Year to all,

Kris
OA4DB0

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: bfollett@ditell.com
Subject: [1890] Switching Power Supplies/Hotel Antennas
Message-ID: <199512261910.MAA10916@solar.ditell.com>

Paul recently wrote about the above subjects...and more:

Switching Power Supplies:

When Yaesu came out with the FT747, they also made a switching power supply for it, rated at 20amps intermittent, about 1 inch high, and very light. I own one...

I found that at home, with a good ground and tuned antenna, it worked great. But when I took it on vacations, where grounds were questionable, and I used a G5RV, I got both power supply noise, and worse yet, feedback into the xmit. output! By working with counterpoise, grounds, RShack filters (they didn't seem to help), I could eliminate the Xmit. problem, work DX, but still had substantial noise added to the receive side.

Because of these kinds of problems, Yaesu discontinued the PS...Now this thing is designed for HF radio, has substantial filtering, and yet still has problems...So a word to the wise, don't try to convert a Computer switching supply unless you have lots of time on your hands.

HOTEL ANTENNAS:

I too, travel alot, and have experimented with several antennas, mostly meeting with either outright failure or at best, marginal performance. Paul's idea of loading the window frame sounds good, but I doubt that in most hotels it would work because the outer walls have lot's of metal in them, and the window frames are attached to steel studs. (however, 1 or 2 story Motels could be a different story). No, we are talking Hotels here, otherwise, the old "run the coax out to the car" trick is an easy solution.

There are two major catagories here: Sealed window and openable window hotels. For the openable ones, I think we should be able to come up with a workable solution, provided the receiver can filter out the horrendous noise a commercial building, and its neighbors generate. My personal best solution so far, is to stuff as much wire as I can out the window, try to find a way to get the far end away from the wall (very important), and use a counterpoise in the room. For receive only, I use an active antenna, 9V powered, with a 6 ft. whip that clamps to the metal window ledge...that actually works well as long as you aren't in an "RF hot" section of town (read, commercial AM/FM xmitters).

Sealed Windows:

I, personally, have found nothing that works well yet. Receive is extremely poor, unless the glass is quite large, and I stick my active antenna in the middle of the glass with a suction cup. I haven't tried xmit. in this environment, but my next experiment is:

The McLelland Compact Loop. Actually called a "Distributed Capacity Loop", it is made from 300 ohm twinlead, looks like an inverted delta loop, but, for 40M, the loop circumf. is 17 ft, or less than 6 ft on a side, so you can hang it from the curtain tops in the hotel room. According to AntennasWest, the bandwidth at 1.5:1 is only 11Khz to either side without tuner, or alot more with a balanced input tuner. (The relatively small size is due to a 180 degree twist in the 300 ohm line with connections at opposite ends...thus fully loaded w/capacitance)

If anyone is interested, the original references are: 73 Magazine, 9/93 and 4/94, for 40M and 160M DC loops. In summary, is "sounds good", in that it is small, light, requires no ground or radials, but is very narrowbanded w/o tuner...Of course I need to build one to see how much the tuned center frequency changes due to surroundings....I'll report when done, but if anyone wants the detailed construction data now, just e-mail me.

Any other Hotel antenna thoughts from anyone?

72 es Happy New Year, Bob, WA7FCU

Bob Follett

Park City, UT 84060

Home Office E-mail: bfollett.ditell.com

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: KE3FL@delphi.com
Subject: [1882] SWR & POWER supply info, and HOTEL ANTENNAS
Message-ID: <01HZ9EQJM6SY9AMWZU@delphi.com>

SWR info:

Changing line length of twin-lead feedline should NOT change SWR & what you read should be correct. Coax has a problem because RF can travel on the outside as well thus screwing up the SWR reading. Things I have found about measuring SWR:

- * SWR does NOT change for different lengths of coax, but IF it SEEMS to:
- 1. The feedline is not 50 ohms (IF you are using an SWR meter for 50 ohm work)
- 2. The SWR bridge is not set to 50 ohms (IF you are trying to measure 50 ohm coax etc.)
- 3. The feedline losses are significant
- 4. The feedline is acting like part of the antenna system and radiating RF (RF is on the outside of the coax.)

Hope this helps.

POWER supply info:

Computer power supplies are switching supplies. Older, and still some newer ones, required about 20 - 30% of their current rating to function correctly. Some newer ones (perhaps they are more expensive & not used in inexpensive computers which use higher current anyway?) have been designed to work with almost no current draw. LAST be aware that a switching power supply uses frequencies to switch from one power to another, these frequencies can cause problems to your receiver. I remember trying one with 2-meter stuff & having problems on a few freq because of it. You might try it first on your HF stuff & make sure it's OK before giving it a permanent home.

HOTEL ANTENNAS:

I've seen many questions and few answers... I've used a 40 meter

dipole also with less than exciting results INSIDE the hotel room. RX seems OK but responses yet. I've used the same antenna inside two different houses with OK results, so it's perhaps the building materials.

I was wondering, I've seen a number of QST articles about loading up everything including two cars a antennas. Perhaps we should try a small tuner & tune up the window frames? I'm going to try that next trip (which isn't for some time) so if anyone gets to it sooner let us know.

73 de KE3FL/Phil
:-)

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: Glen Leinweber <leinwebe@mcmail.CIS.McMaster.CA>
Subject: [1891] Using DSP's with R2 receiver
Message-ID: <1995Dec26.164213-0500@[130.113.234.7]>

Hi everyone,

Was reading the '95 handbook while waiting for Christmas to happen. Gosh, its good. The theory sections are excellent - lots of new stuff - very well written.

Read the stuff on applying digital signal processor to Rick Campbell's R2 phasing type receiver. All the theory is there: use a FIR filter with a Hilbert transform to do the 90 degree audio phase shift. Looks almost easy.

So here's the bad news:

Looked at the "bit budget" to find the dynamic range that's possible. Looks like any reasonable analog-to-digital converter will severely limit the range of signal amplitudes. Remember, Rick's original goal was to transform a small part of the electromagnetic spectrum down to audio, with as little distortion as possible. That means no AGC. He was after CD quality sound - CD's have a dynamic range of about 96 dB, determined by the 16 bit encoding of the analog sound.

So what kind of dynamic range could we expect from a DSP? The TI DSP kit includes analog-to-digital converter that encodes 14 bits. Ok, we're down to 84 dB dynamic range.

But what about the bottom end? What's the minimum # bits required to accurately encode the smallest signal, and still get reasonable sideband suppression? We have to encode the

input signals so that their amplitude and phase are accurate to within at least 0.5%, to allow sideband suppression. That means we need eight bits to encode the smallest signals.

This number of bits can be reduced by oversampling, but I'd guess six bits would still be necessary.

That leaves 8 bits of dynamic range - a measly 48 dB. So you'd have to have a volume control somewhere before the DSP to accomodate a wider signal range. Or, you could have the DSP drive a voltage-variable attenuator (AGC). But you won't get the wide open dynamic range that the R2 has with its current system of analog phase-shifting.

Now I'm no DSP guru, so if there's someone who knows a way around this problem, let's hear from you. Dang, I was looking forward to trying out a DSP here, but not with this penalty.
Glen VE3DNL leinwebe@mcmaster.ca

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: joe@westonia.com (Joseph Cooper)
Subject: [1897] Re: 1.75 km sigs, low power loonies & marxist dialectics
Message-ID: <m0tU1qB-000i9wC@gpu2.westonia.com>

>I heard a signal on 183.9 kHz at about 0100 UTC calling XJ XJ XJ
>XJ XJ. So I quick got the wires hosed up to put the high side of
>the secondary on my wire antoona and listened again. The whole signal
>went like this CQ CQ CQ de XJ XJ XJ CQ CQ CQ de XJ XJ XJ. Then
>after another cycle of this beaquesque stuff, a K. And since my TR7
>transmits from DC to 30 MHz, I quick sent out the reply XJ XJ XJ de
>JN JN JN K. And no response. But what the heck, I had .225 V of
>RMS RF going out the wire. What's that at 50 Ohms? A microwatt?
>

>Now the question remains: Who the hell is XJ? Where is this person?
>What kind of madman would send CQ on the 1.75 km band in the middle
>of the winter? Did he really expect a call? Did he even hear me?
>Why am I asking all these questions? Why don't you answer? Huh?
>

'XJ' is a 'Lowfer'. That is, a person who is operating in the 1750 Metre experimental band. They are located near Whippoorwill Ohio and operate a beacon on 184.720 Khz. They may have not been listening at that time.

The 'Lowfer' and 'Medfer' group is a very active hobby group who do not see themselves as being part of traditional Amature Radio activity, though they are very much the embodiment of what HAM radio was before WWI.

The basics of Lowfer operation is that under FCC rules you can operate an unlicensed non-interfering transmitter in the frequency range of 160KHz to 190 KHz. You are limited to 1 watt input and your total antenna (Feed + Ground Plane + Antenna) must not exceed 50 ft. As propagation with these frequencies are not the same as HF, you may find that you can get a good distance with this type of arrangement (say between 50 to 400 miles depending). LF tends to be more noisy but more efficient for transmission, with the band behaving in some ways like 160 meters.

There are a number of transmitter and receiver kits on the market for 1750 meter operation. If you are interested you can email me for a list.

At this time there are discussions taking place with the FCC by the ARRL regarding the opening of a band in the LF range. It may not be the 1750 meter band, but in a higher frequency range. The reason for this interest is due to the slow but steady de-commissioning of LF air and maritime navigation beacons as Global Direction Finding technology takes over. By the year 2000 large amounts of LF spectrum will be open and available for re-issue and the ARRL want to get their 'bid' in now. This action is not theirs alone, but is also being undertaken by European and Asian groups as well on a world wide basis.

At this time the Lowfer group is made up primarily of non-Hams. Those who are both Hams and Lowfers have two nets that are open to discussion. They are 1983 KHz for those in the East on Sunday Evening. For those in the West, use 3927 KHz, Thur at 8 pm and Sunday at 7:30 AM.

There is Lowfer activity in Canada, but to be legal you must have an Advanced Amateur Certificate and get permission from the Radio inspector in Writing. There does not appear to be any regulations against Canadian and US Lowfers communicating that I have encountered.

If you are interested in this topic, there is the Longwave Club of America, which publishes 'The Lowdown' every month. Membership is \$18.00 U.S. per year. They have been publishing since 1974.

There address is

LWCA
45 Wildflower Rd.
Levittown P.A.
19057

They also carry articles on beacons, Nature Radio and other LF, VLF and ELF topics. Nature radio is a very interesting area where strange phenomena is studied at frequencies of 300 Hz (yes Hz) and below. Here, using special but inexpensive radio sets, you can hear the sounds of lightning EMF caught in the earths magnetic field, the radio discharge of grass when the wind blows

over it, and the sound of an insect's nervous system firing its wings as it flys by you.

Yes, just when you thought that you had done everything in radio, something new pops up to catch your interest.

For myself, I am collecting information on old VLF transmitter sites in the U.S., particularly in New York and New Jersey. Imagine an antenna that was 400 feet high and had multiple wires 7200 feet long. There were several in operation up to the 1960's. I would welcome any emails on this topic.

P.S. I can't answer any questions about Marxist Dialectics though. I'm. The closest that I can come up with is that after the end of World War II the Russians confiscated the Worlds Largest VLF transmitter (operated at 18 Khz) at Goliath Germany and set it up outside of Moscow. It was reported to be still in operation during the 1960's and I'm trying to find out if it is still being used today.

```
=====
* Joseph Cooper-VE3FMQ  QTH-East York-near Toronto Ontario Canada *
* Interests are:-Lowfer/VLF/BCB Radio-Woodworking-Steam Railroads *
* -Nikola Tesla-Antique Radios-Crystal Radios-Travel-Burmese Cats *
* FAX (416) 423-7782  9:00pm to 5:00pm EDST Monday To Friday Only *
=====
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From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: KFGlynn@aol.com
Subject: [1867] Re: 40 Meter Small Yagi
Message-ID: <951225230914_99132703@mail04.mail.aol.com>

Randy,

I just read about one in the ARRL Ant Bk 1995. I am going to make a vertical helical for 40M and recd good feedback from the list, too.

GL

73 de Kevin KB2TE0

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: msdooley@rdxsunhost.aud.alcatel.com (Michael S. Dooley)
Subject: [1869] Re: ?? on flying with qrp rigs and hotel antenna's
Message-ID: <9512260541.AA07084@collie.aud.alcatel.com>

I've only had a problem at one airport and that was LaGuardia. This occurred in about 1983 and I had my HT in my briefcase. They insisted I return to the checkin counter and place it in checked baggage. While I was doing that, the fellow I was travelling with took my ticket down to the gate to get our seats. I almost missed the plane because the guards wouldn't let me past the checkpoint without a ticket... yes, the same guards who had sent me back to place the radio in checkin baggage. Thought I was gonna get arrested that time 8-)...

Mike KE4PC

> > I don't want to be delayed by inquisitive security
> > people at the terminal. I never check by baggage so anything I take, I carry
> > on the plane. Should I expect any problems?
> >
>
> Peter,
> I used to take my 2 meter HT everytime I flew commercial.
> I packed a NiCad charging transformer along in my briefcase.
> I never had a problem.
[snip]
> 72 de cameron, kt3a

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: KFGlynn@aol.com
Subject: [1866] Re: ??? Folded dipoles & loops = low noise?
Message-ID: <951225230849_99132470@emout05.mail.aol.com>

Both Bill Orr W6SAI and Doug DeMaw W1FB have written about full-size closed loops being more broadbanded than dipoles and more immune from man made noise due to their being closed circuits - especially good for weak sig reception.

Kevin KB2TE0

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995

From: Rick Zabrodski <zabrodsk@med.ucalgary.ca>
Subject: [1868] Re: ??? Folded dipoles & loops = low noise?
Message-ID: <Pine.SUN.3.91.951225223432.17277B-100000@ume>

> Both Bill Orr W6SAI and Doug DeMaw W1FB have written about full-size closed
> loops being more broadbanded than dipoles and more immune from man made noise
> due to their being closed circuits - especially good for weak sig reception.

I would agree but make it a "qualified agreement". If you feed that loop
close to the ground (and the man made noise) and feed it to be vertically
polarized (corner feed) the noise level certainly goes up!

Dr. Rick Zabrodski BSc, MD, CCFP(E) * VE6GK
Clinical Assistant Professor * NorCal 519 ARCI 7650 GQRP 8329
Faculty of Medicine, Univ. of Calgary * "Power is no substitute for skill"

From qrp-l@lehigh.edu Tue Dec 26 21:14:31 1995
From: cebik@UTKVBX.UTCC.UTK.EDU
Subject: [1875] Re: Interesting Stats
Message-ID: <Pine.PMDF.3.91.951226074115.539116410B-100000@utkvx.utk.edu>

On Sun, 24 Dec 1995, Alan Kaul wrote:

> try
> figuring out who has QRP-L, Norcal and QRP membership!!!! I do and
> presume there's a lot of other triple whammies out there, too!!
Alan,

Although NORCAL certainly has done great work, and QRPARCI is very old
(by today's standards that make something an antique if over 25 years
old), there are a number of groups who also deserve continuing
recognition of service to QRP by being included in all counts: NE, MI,
CQC, and NW, to mention a few with journals or newsletters of national
QRP interest, plus some very active and notable local area clubs. All
deserve our support. Indeed, it would be an interesting book(let)(?) if
someone would contact each known group and get a write-up on their 1.
History, 2. present activities, and 3. future hopes and plan--to include
joining information. The magazine and QRP club listings in the QRP-L
archives have some good information, but cannot capture the flavor of
each group--they all have unique personalities and make unique
contributions to the qrp artform. Wonder if there is another Ade Weiss
out there with the energy and time to pull all that together.

Now for the hard job: figuring out in what ways and to what extent that

this list has contributed to the membership and the contributions of each group. Everyone knows that QRP-L has cemented and interconnected a lot of the groups. It is also a spur, thorn in the saddle, etc. that has challenged some groups to do things with more fervor than before, to do new things, etc. And, as the old song says, the beat goes on. History in the making, as well as a lot of QRP development and operating in the making.

So I wish to you and to each local, regional, national, and international QRP group a prosperous and challenging 1996. So much has been done that it has revealed to us that there is still so much to do.

-73-

LB, W4RNL

L. B. Cebik, W4RNL	/\	/\	*	/	/	/	(Off)(615) 974-7215
1434 High Mesa Drive	/	\	\	----	/	---	(Hm) (615) 938-6335
Knoxville, Tennessee	/\	\	\	/	/		(FAX)(615) 974-3509
37938-4443 USA	/	\	\				cebik@utkvx.utk.edu
QRP-ARCI 2572	G-QRP	7203	CQC	125	NEQRP	347	NORCAL 1111
QRP-L 37			ARRL-Life		QCWA-Life		MIQRP 1432
							10-10 41159

From qrp-l@lehigh.edu Tue Dec 26 21:14:31 1995
 From: Frank G3YCC <frank@yorks.demon.co.uk>
 Subject: [1874] Re: Merry Christmas
 Message-ID: <BL03QBABVm3wEwBz@yorks.demon.co.uk>

In message <v01530502ad040d19ba78@[199.120.150.37]>, Michael Herr
 <herr@owens.ridgecrest.ca.us> writes
 >I want to wish you all a Merry Christmas and a Happy New Year from the high
 >Mojave desert.
 >We woke up on Christmas Adam (two days before christmas, as adam came
 >before eve) with a blanket of snow about 3 inches thick on the desert
 >floor. This morning, Christmas eve, the snow is melting rapidly.
 >I'm looking forward to christmas, as I believe there might just be a qrp
 >goody or two under there as well. I'm also finally taking some time off and
 >hope to get to work on the Cascade!
 >I wish all Qrpers and their families health and cheer this season and the
 >rest of the year.
 >73, 72 es Merry Christmas
 >Mike, WA6ARA and Paula N6VGW
 >
 >
 >

Good day and many thanks for your mail. It is so nice to read it this Christmas morn, here in HULL, YORKSHIRE. We have no snow at all, but the gardens are white with a severe frost.

I wish you both a happy holiday and a good 1996.

Best 72/3

--

Frank G3YCC

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995

From: cebik@UTKVVX.UTCC.UTK.EDU

Subject: [1898] Re: QRP Antennas for 20 and up

Message-ID: <Pine.PMDF.3.91.951226213651.539130725B-1000000@utkvx.utk.edu>

For 20 and up, where a dipole is only about 35' long, consider a dipole of tubing that you can rotate up to 90 degrees. That will get you broadside to your target, wherever in the world he or she is. Armstrong rotators, ropes and pulleys, etc. are all adequate to the job. Even if you use a 20 meter dipole on bands up through 10, where the lobes go askew relative to the 20-meter band of resonance, rotation of 90 degrees will get your strongest lobe on your target.

Murphy's Law (no. XXIV) says that your most wanted target will always be in your deepest pattern null. To beat Murphy, you must have moveable nulls, and that means rotation. Requires extra planning, extra fabrication, and extra maintenance, relative to a piece of wire that has been in place 10 years. But the QSOs you hear may be your own.

Obviously, a beam and electric motor rotator are better, but not by as much as you think. Of course, you can always put up two or three wire dipoles at different angles and switch from one to another for the same effect. Lew McCoy presented a 15 meter rotatable dipole back in the late 60s, and, if my memory is correct, I believe he said George Grammer put him onto it. He used heavy electrical conduit--we have access to usable aluminum tubing from hardware warehouses these days.

For most cases, the null off the end of a dipole is deeper than almost any antenna's front-to-back ratio. I have made numerous contacts with the beam canted--not straight at the station I was trying to work, but directly end onto an offending qrm source.

Just another idea for the pot.

-73-

LB, W4RNL

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: K3tks
Subject: QRP Beacon

--

George Gingell, user of the UniBoard System @ abs.net
E-Mail: George.Gingell@bbs.abs.net
The WB3FFV Amateur Radio BBS - Located in Baltimore, Maryland USA
Supporting the Amateur Radio Hobby, and TCP/IP InterNetworking

From qrp-1@lehigh.edu Tue Dec 26 21:14:31 1995
From: Alan Kaul <kaul@netcom.com>
Subject: [1872] Re: Stats Summary
Message-ID: <Pine.3.89.9512252253.A15233-01000000@netcom20>

Sorry to ask you to work extra, Chuck ... but thanks very much for an
interesting listing of users. Best 72/73, de alan

[<Alan Kaul, W6RCL>] kaul@netcom.com